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EXAMINER

AZEMAR, GUERSSY

ART UNIT PAPER NUMBER

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/606,677	Applicant(s) MAHONY ET AL.	
	Examiner Guerssy Azemar	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 May 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>06/27/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 8, 19, 24, 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Xu et al. (US 20020071149).

(1) with respect to claims 1, and 24:

As shown in figure 1, Xu et al. discloses a telecommunications system, comprising:

a passive optical network (1 in figure 1) including an optical splitter configured to serve optical network terminations at respective ones of a plurality of subscriber premises (103 in figure 1, "xDSL Modem" in figure 1 as a type of network termination); and an optical network unit (ONU) coupled to the PON and configured to provide communications for the plurality of the subscriber premises (figure 1).

(2) with respect to claims 2, and 25:

Xu et al. discloses a system and method, wherein the optical splitter directly subtends the ONU (303, 103 in figure 2).

(3) with respect to claims 8:

Xu et al. discloses a system, comprising a plurality of ONU's that provide communications to respective geographical clusters of subscriber premises, and wherein the PON comprises a plurality of optical splitters configured to serve ONT's at respective ones of the geographical clusters of subscriber premises and subtending the respective ONU's ("local network" and "PBx" in figure 1).

(4) with respect to claim 19:

Xu et al. discloses a system, wherein the ONU is coupled to the OLT through a plurality of optical splitters (801, 803 in figure 8).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3 – 7, 12, 13, 15, 16, 21- 23, 26 – 28, 33, 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu et al. (US 20020071149) in view of Bears (5,349,457).

(1) with respect to claims 3, and 26:

Xu et al. discloses all of the subject matter as described above, except for a system wherein the optical splitter and the ONU are co-located.

However Bears discloses a system wherein the optical splitter and the ONU are co-located (column 4, lines 36 – 38, 39 - 41).

Reducing hardware requirements in digital communications has a significant impact on its economy. Extra fiber optic cable wouldn't be necessary if the splitter and the ONU were co-located. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the ONU and the splitter at the same location as taught by Bears in the network of Xu et al. because, in doing so, the network would have good survivability and would be cheaper.

(2) with respect to claims 4, and 27:

Xu et al. discloses all of the subject matter as described above, except for a system wherein the optical splitter and the ONU are positioned at a pedestal or a pole.

However, Bears discloses a system wherein the optical splitter and the ONU are positioned at a pedestal or a pole (column 4, lines 36 – 38, 39 - 41).

Reducing hardware requirements in digital communications has a significant impact on its economy. Extra fiber optic cable wouldn't be necessary if the splitter and the ONU were co-located. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the ONU and the splitter at the same location as taught by Bears in the network of Xu et al. because, in doing so, the network would have good survivability and would be cheaper.

(3) with respect to claims 5, and 28:

Xu et al. discloses all of the subject matter as described above, except for a system wherein the ONU is powered by a power source a location remote from the ONU.

However, Bears discloses for a system wherein the ONU is powered by a power source a location remote from the ONU (column 5, lines 33 - 35).

ONU's are not powered at the subscriber's premise. Bears teaches a way of powering the ONU's from a place nearby. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the power pedestal as taught by Bears to power the ONU's of Xu et al., it would make a significant impact on the economy of the network and it would also provide it with good survivability.

(4) with respect to claim 6:

Xu et al. discloses all of the subject matter as described above, except for a system, wherein a composite copper/fiber cable couples an optical line terminal (OLT) and the power source to the optical splitter and the ONU, respectively.

However, Bears discloses wherein a composite copper/fiber cable couples an optical line terminal (OLT) and the power source to the optical splitter and the ONU, respectively (column 5, lines 56 - 59).

ONU's are not powered at the subscriber's premise. Bears teaches a way of powering the ONU's from a place nearby. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the power pedestal as taught by Bears to power the ONU's of Xu et al., it would make a significant impact on the economy of the network and it would also provide it with good survivability.

(5) with respect to claim 7:

Xu et al. discloses all of the subject matter as described above, except for a system wherein a composite copper/fiber cable couples a host digital terminal (HDT) and the power source to the optical splitter and the ONU, respectively.

However, Bears discloses a composite copper/fiber cable couples a host digital terminal (HDT) and the power source to the optical splitter and the ONU, respectively (RDT in figure 1).

Bears does not explicitly discloses the connection of the digital terminal and the power source to the splitter and the ONU, but does show the connection between the digital terminal to the pedestal where the ONU and the splitter are located, and which are powered by the power source. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the connection as taught by Bears in the network of Xu et al. because it would make it cheaper.

(6) with respect to claim 12:

Xu et al. teaches a system, wherein the optical splitter interfaces a first optical fiber to a plurality of second optical fibers (figure 1); wherein one of the second optical fibers directly connects the optical splitter to the ONU (figure 1);

Xu et al. does not disclose a system, wherein the optical splitter and the ONU are positioned at a pedestal; wherein at least one of the second optical fibers comprises a buried fiber optic drop extending from the pedestal to an ONT at subscriber premises.

However, Bears teaches for a system, wherein the optical splitter and the ONU are positioned at a pedestal (column 4, lines 36 - 38, 44 - 46); wherein at least one of

Art Unit: 2613

the second optical fibers comprises a buried fiber optic drop extending from the pedestal to an ONT at subscriber premises (column 4, lines 40 - 44).

Bears does not explicitly teach a buried fiber optic drop extending from the pedestal on an ONT at the subscriber premises, but does disclose buried fiber at the distribution. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the buried fibers as taught by Bears between the pedestal to an ONT at the subscriber premises because it would make a significant impact on the economy of the network and it would also provide it with good survivability.

(7) with respect to claim 13:

Xu et al. discloses a system, wherein the optical splitter interfaces a first optical fiber to a plurality of second optical fibers (see figure 1); wherein one of the second optical fibers directly connects the optical splitter to the ONU (see figure 1); and wherein the system further comprises: a second optical splitter at the service drop location that interfaces the at least one of the second optical fibers to at least one fiber optic drop connected to an ONT at a subscriber premises; and at least one conductor drop extending from the service drop location to the subscriber premises (see figure 1).

Xu et al. does not disclose a system, wherein the optical splitter and the ONU are positioned at a pedestal; wherein a buried composite cable carries at least one of the second optical fibers and at least one conductor from the ONU to a service drop location.

However, Bears teaches a system, wherein the optical splitter and the ONU are positioned at a pedestal (column 4, lines 36 - 38, 44 - 46); wherein a buried composite cable carries at least one of the second optical fibers and at least one conductor from the ONU to a service drop location (column 4, lines 40 - 44).

Bears does not explicitly teach a buried fiber optic drop extending from the pedestal on an ONT at the subscriber premises, but does disclose buried fiber at the distribution. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the buried fibers as taught by Bears between the pedestal to an ONT at the subscriber premises because it would make a significant impact on the economy of the network and it would also provide it with good survivability.

(8) with respect to claim 15:

Xu et al. teaches a system, wherein the optical splitter interfaces a first optical fiber to a plurality of second optical fibers (figure 1); wherein one of the second optical fibers directly connects the optical splitter to the ONU (figure 1);

Xu et al. does not disclose a system, wherein the optical splitter and the ONU are positioned at a pole; wherein at least one of the second optical fibers comprises an aerial fiber optic drop extending from the pedestal to an ONT at subscriber premises.

However, Bears teaches for a system, wherein the optical splitter and the ONU are positioned at a pole (column 4, lines 36 - 38, 44 - 46); wherein at least one of the second optical fibers comprises an aerial fiber optic drop extending from the pedestal to an ONT at subscriber premises (column 4, lines 40 - 44).

Bears does not explicitly teach an aerial fiber optic drop extending from the pedestal on an ONT at the subscriber premises, but does disclose aerial fiber at the distribution. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the buried fibers as taught by Bears between the pedestal to an ONT at the subscriber premises because it would make a significant impact on the economy of the network and it would also provide it with good survivability.

(9) with respect to claim 16:

Xu et al. discloses a system, wherein the optical splitter interfaces a first optical fiber to a plurality of second optical fibers (see figure 1); wherein one of the second optical fibers directly connects the optical splitter to the ONU (see figure 1); a second splitter that interfaces

Xu et al. does not disclose a system, wherein the optical splitter and the ONU are positioned at a first pole; and wherein an aerial composite cable carries at least one of the second optical fibers and at least one conductor from the ONU to a second pole; and wherein the system further comprises: a second optical splitter that is positioned at the second pole and that interfaces the at least one of the second optical fibers to at least one aerial fiber optic drop connected to an ONT at a subscriber premises; and at least one aerial conductor drop extending from the second pole to the subscriber premises.

However, Bears discloses disclose a system, wherein the optical splitter and the ONU are positioned at a first pole; and wherein an aerial composite cable carries at

Art Unit: 2613

least one of the second optical fibers and at least one conductor from the ONU to a second pole; and wherein the system further comprises: a second optical splitter that is positioned at the second pole and that interfaces the at least one of the second optical fibers to at least one aerial fiber optic drop connected to an ONT at a subscriber premises; and at least one aerial conductor drop extending from the second pole to the subscriber premises (column 4, lines, lines 40 - 44).

Bears does not explicitly teach an aerial fiber optic drop extending from the pedestal on an ONT at the subscriber premises, but does disclose aerial fiber at the distribution, which infers a first and a second pole to support that fiber.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the buried fibers as taught by Bears between the pedestal to an ONT at the subscriber premises because it would make a significant impact on the economy of the network and it would also provide it with good survivability.

(10) with respect to claim 21:

Xu et al. teaches a telecommunications apparatus, comprising:

an optical splitter configured to interface a first fiber of a PON to a plurality of second fibers (109, 303, 109 in figure 2); and ONU and splitter, connected to one of the second optical fibers and configured to interface a plurality of conductive circuits to the one of the second fibers (see figure 4).

However Xu et al. does not teach an ONU co-located with a splitter.

Bears teaches an ONU co-located with a splitter.

Reducing hardware requirements in digital communications has a significant impact on its economy. Extra fiber optic cable wouldn't be necessary if the splitter and the ONU were co-located. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the ONU and the splitter at the same location as taught by Bears in the network of Xu et al. because, in doing so, the network would have good survivability and would be cheaper.

(11) with respect to claim 22:

Xu et al. discloses all of the subject matter as described above, except for a system wherein the optical splitter and the ONU are co-located.

However Bears discloses a system wherein the optical splitter and the ONU are co-located (column 4, lines 36 – 38, 39 - 41).

Reducing hardware requirements in digital communications has a significant impact on its economy. Extra fiber optic cable wouldn't be necessary if the splitter and the ONU were co-located. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the ONU and the splitter at the same location as taught by Bears in the network of Xu et al. because, in doing so, the network would have good survivability and would be cheaper.

(12) with respect to claim 23:

Xu et al. discloses all of the subject matter except as described above, except for an apparatus, wherein the optical splitter and the ONU are respectively configured to receive the first fiber and a power conductor from a composite cable.

However Bears teaches an apparatus, wherein the optical splitter and the ONU are respectively configured to receive the first fiber and a power conductor from a composite cable (column 5, lines 33 - 35).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the power pedestal as taught by Bears to power the ONU's of Xu et al., it would make a significant impact on the economy of the network and it would also provide it with good survivability.

(13) with respect to claim 33:

Xu et al. discloses all of the subject matter as described above, except for a method, wherein the PON comprises one of an OLT or an HDT located at one of a central office (CO) or a remote terminal (RT).

However, Bears discloses wherein the PON comprises one of an OLT or an HDT located at one of a central office (CO) or a remote terminal (RT) (RDT in figure 1).

Bears discloses a digital terminal that is located away from the pedestal. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the digital terminal as taught by Bears in the Xu et al.'s network because it would make it cheaper, with good survivability.

(14) with respect to claim 34:

Xu et al. discloses all of the subject matter as described above, except for a method, wherein the ONU is coupled to one of an OLT or an HDT of the PON through a plurality of optical splitters.

However, Bears discloses a method, wherein the ONU is coupled to one of an OLT or an HDT of the PON through a plurality of optical splitters (figure 1).

The digital terminal is coupled to the pedestal, and figure 1 indirectly shows that there are splitters in between branching out to other pedestals, in other words other ONU's. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the connection as taught by Bears in the network of Xu et al. because it would make it cheaper, with good survivability.

5. Claims 9 – 11, 29, 31, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu et al. (US 20020071149) in view of Lund et al. (20020184644).

(1) with respect to claims 9, and 29:

Xu et al. discloses all of the subject matter as described above. Xu et al. further teaches system and method, wherein the optical splitter interfaces a first optical fiber to a plurality of second optical fibers; wherein one of the second optical fibers directly connects the optical splitter to the ONU (figure 1, 109, 103 in figure 2, 803, 103 in figure 4).

However Xu et al. does not disclose the system, wherein at least one of the second optical fibers directly serves subscriber premises of the plurality of subscriber premises.

Lund et al. discloses the system and method, wherein at least one of the second optical fibers directly serves subscriber premises of the plurality of subscriber premises (56a-56n in figure 1, page 1, paragraph 0013, last four lines).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the fibers as taught by Lund et al. to serve the subscriber premises of Xu et al. because they offer to lower equipment costs over traditional point-to-point network.

(2) with respect to claims 10, and 31:

Xu et al. discloses all of the subject matter as described above, except for a system and method, wherein at least one of the second optical fibers serves a second optical splitter.

However, Lund et al. discloses a system wherein at least one of the second optical fibers serves a second optical splitter (55a-55n in figure 1).

Because of the high cost required in building fiber optic networks, it is desirable to provide solutions aiming to reduce the prices of equipment used in the process. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the fibers as taught by Lund et al. because that would reduce the total cost of the network.

(3) with respect to claims 11, and 32:

Xu et al. teaches a system and method, wherein at least one of the second optical fibers serves a second ONU that provides communications for a second plurality of subscriber premises (figure 1).

(4) with respect to claim 18:

Xu et al. discloses all of the subject matter as described above, except for a system, wherein the OLT is located at one of a central office (CO) or a remote terminal.

However, Lund et al. discloses a system, wherein the OLT is located at one of a central office (CO) or a remote terminal (41a, 52 in figure 1).

Because of the high cost required in building fiber optic networks, it is desirable to provide solutions aiming to reduce the prices of equipment used in the process. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the fibers as taught by Lund et al. because that would reduce the total cost of the network.

(5) with respect to claim 30:

Xu et al. teaches an ONT at the subscriber premises.

However, Xu et al. does not teach a method, further comprising directly connecting at least one of the second optical fibers.

Lund et al. teaches a method, further comprising directly connecting at least one of the second optical fibers (56a – 56n in figure 1).

Because of the high cost required in building fiber optic networks, it is desirable to provide solutions aiming to reduce the prices of equipment used in the process. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the fibers as taught by Lund et al. because that would reduce the total cost of the network.

6. Claims 20, 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu et al. (US 20020071149) in view of Battey et al. (US 6,483,977).

(1) with respect to claim 20:

Xu et al. teaches a system, wherein the optical splitter is configured to be coupled to a plurality of fiber optic drops that serve the plurality of subscriber premises (figure 1, fiber optic drop is inherent in delivering fiber related services); wherein the OLT and the ONU are configured to provide a broadband service via the fiber optic drops (see figure 1); and a system to provide voice service and/or data service (see figure 1).

However Xu et al. does not teach the conductor drops.

Batthey et al. teaches the conductor drops (column 1, line 50).

Therefore it would have been obvious to one of ordinary skill in the art to use the movable conductor drops as taught by Batthey et al. in the subscriber premises of Xu et al. because the cables would be more secure and more retainable.

(2) with respect to claim 35:

Xu et al. teaches a method, wherein the optical splitter is configured to be coupled to a plurality of fiber optic drops that serve a plurality of subscriber premises (see figure 1); and a method further comprises: providing a broadband service via the fiber optic drop (fiber optic drop is inherent in delivering fiber related services);

Although Xu et al. teaches the ONU that serves a plurality of subscriber premises, and providing a voice service and/or a data service, it does not teach the conductor drop.

However, Batthey et al. teaches the conductor drops (column 1, line 50).

Therefore it would have been obvious to one of ordinary skill in the art to use the movable conductor drops as taught by Battey et al. in the subscriber premises of Xu et al. because the cables would be more secure and more retainable.

7. Claims 14, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xu et al. (US 20020071149) and Bears (5,349,457) as applied to claims 4 and 9 above, and further in view of Dixit (5,133,039).

(1) with respect to claim 14:

Xu et al. and Bears teach all of the subject matter as described above, except for a system, wherein a cable carries at least one of the second optical fibers and at least one conductor connected to a second side of the street.

Dixit teaches a system, wherein a cable carries at least one of the second optical fibers and at least one conductor connected to a second side of the street (column 12, lines 43 - 68).

It is desirable to reduce cost in distribution of fiber optic cable services. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to carry the fibers as taught by Dixit in the network of Xu et al. because it would clearly reduce the cost of bring the services to the subscriber premises.

(2) with respect to claim 17:

Xu et al. and Bears teach all of the subject matter as described above, except for the system comprising second sides of the street and a second pole on the first side of the street.

Dixit teaches the system comprising second sides of the street and a second pole on the first side of the street (column 12, lines 43 - 68).

It is desirable to reduce cost in distribution of fiber optic cable services. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to carry the fibers as taught by Dixit in the network of Xu et al. because it would clearly reduce the cost of bring the services to the subscriber premises.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guerssy Azemar whose telephone number is (571)270-1076. The examiner can normally be reached on Mon-Fri (every other Fridays off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Liu Shuwang can be reached on (571)272-3036. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



SHUWANG LIU
SUPERVISORY PATENT EXAMINER